

Operators

An operator is a symbol that tells the compiler to perform specific mathematical or logical functions. C language is rich in built-in operators and provides the following types of operators

- Arithmetic Operators
- Relational Operators
- Logical Operators
- Bitwise Operators
- Assignment Operators

Arithmetic Operators:

Arithmetic operators are used to perform common mathematical operations.

Operator	Name	Description
+	Addition	Adds together two values
-	Subtraction	Subtracts one value from another
*	Multiplication	Multiplies two values
/	Division	Divides one value by another
%	Modulus	Returns the division remainder
++	Increment	Increases the value of a variable by 1
--	Decrement	Decreases the value of a variable by 1

Relational operators:

Operator	Description
==	Checks if the values of two operands are equal or not. If yes, then the condition becomes true.
!=	Checks if the values of two operands are equal or not. If the values are not equal, then the condition becomes true.
>	Checks if the value of left operand is greater than the value of right operand. If yes, then the condition becomes true.
<	Checks if the value of left operand is less than the value of right operand. If yes, then the condition becomes true.
>=	Checks if the value of left operand is greater than or equal to the value of right operand. If yes, then the condition becomes true.
<=	Checks if the value of left operand is less than or equal to the value of right operand. If yes, then the condition becomes true.

Logical operators:

Operator	Name	Description
&&	Logical and	Returns true if both statements are true
	Logical or	Returns true if one of the statements is true
!	Logical not	Reverse the result, returns false if the result is true

Bitwise operators:

Bitwise operator works on bits and perform bit-by-bit operation. The truth tables for &, | and ^ is as follows

Operator	Description
&	Binary AND Operator copies a bit to the result if it exists in both operands.
	Binary OR Operator copies a bit if it exists in either operand.
^	Binary XOR Operator copies the bit if it is set in one operand but not both.
~	Binary One's Complement Operator is unary and has the effect of 'flipping' bits.
<<	Binary Left Shift Operator. The left operands value is moved left by the number of bits specified by the right operand.
>>	Binary Right Shift Operator. The left operands value is moved right by the number of bits specified by the right operand.

Assignment operators:

Assignment operators are used to assign values to variables.

Operator	Example	Same As
=	x = 5	x = 5
+=	x += 3	x = x + 3
-=	x -= 3	x = x - 3
*=	x *= 3	x = x * 3
/=	x /= 3	x = x / 3
%=	x %= 3	x = x % 3
&=	x &= 3	x = x & 3
=	x = 3	x = x 3
^=	x ^= 3	x = x ^ 3
>>=	x >>= 3	x = x >> 3
<<=	x <<= 3	x = x << 3